

NOTES ON *Aedes curriei* (COQUILLET)

(Diptera, Culicidæ)

BY HARRISON G. DYAR AND FREDERICK KNAB

This peculiar mosquito was first made known in North America from the plains of North Dakota, under the name *Culex curriei* Coquillett. In coloration it essentially resembles *Aedes dorsalis* (Meigen) of Europe, and it is doubtful if Coquillett would ever have separated it therefrom except that, through an error, he was led to believe that the claws of the female were simple in one case and toothed in the other. The error was subsequently corrected, but the species was left to stand on account of what had been discovered in the meantime. This was that mosquitoes of the same general habitus bred in the tidal pools on the coast of California and others were found in central New York State in the general vicinity of the salt wells, while it was to be assumed that those from the western plains bred in temporary pools of fresh water. Here was an obvious difference in habit, indicating apparently three species, one on the great western plains, one on the California coast, and a third in the Atlantic region. These forms received names as species, the Californian one being called *quaylei* by Dyar & Knab from the larvæ and *lativittatus* by Coquillett on the adults. Those from New York were named *onondagensis* by Dr. E. P. Felt. To add to the apparent difference of these forms, Knab discovered the larvæ of the inland *curriei* in Saskatchewan and found marked differences in the number of head hairs and in the distinctness of the central spine of the lateral comb scales. The larvæ of the Pacific and Atlantic forms proved to be much alike. In the monograph¹ we rely mainly on the larva in our separation of the forms, classing *quaylei* as a race of *onondagensis* and holding them distinct from *curriei* on this and on habits, *curriei* appearing to have but a single spring generation in the water following the melting snow, while *quaylei* bred monthly in the high tide pools along the coast. Of the habits of *onondagensis* we knew

¹Howard, Dyar & Knab, The Mosquitoes of North and Central America and the West Indies, iv, 629-638, 1917.

nothing, but imagined vaguely that they must in some way resemble those of *quaylei*. Of course, with two species and a race in America, the European *dorsalis* did not concern us much, as it was quite presumably distinct.

While the monograph was still in press, in 1916, the senior author obtained eggs from captive females in Nevada, a typically inland place and therefore certainly *curriei*. He wet the eggs after first drying them, and, contrary to expectation, the larvæ immediately hatched. To add to this heretical behavior, for, being *curriei* with supposedly but a single annual generation, they should not have hatched until after being subjected to the cold of a northern winter, the head hairs were single and the comb scales without a distinct central spine, thus agreeing with *quaylei* or *onondagensis*. It still appeared possible that there were two species mixed up under *curriei* and that one of them was perhaps to be considered *mediolineata* Ludlow, which was referred in the monograph as a melanotic form of *curriei*. However, no change was introduced in the monograph, which was published immediately. The following year the senior author continued his investigations, this time in Montana, where he found that the *curriei* larvæ were of the same form as in Nevada, and, moreover, had the habit of breeding in irrigation pools at intervals all through the summer. The supposed difference in habit between the coast form and the inland form no longer existed, since eggs of either hatched whenever they were wet, whether the water were salt tidal water, or spring rains, or melting snow, or accidental irrigation pools. Moreover, the larval differences had likewise disappeared, and the question had come around to the correctness of the junior author's observations in Saskatchewan. The material was, therefore, carefully gone over and it was found that, while there were plenty of true *curriei*, the particular skins which had been mounted and studied as *curriei* for all these years were nothing but *canadensis*. The true *curriei* from Saskatchewan have single head-hairs and the scales of the lateral comb without strong central spine exactly as in Nevada and Montana. This unfortunate mistake created a complicated viewpoint and has led to a

great deal of trouble; but we are now able to solve the mystery and correct the synonymy of this species.

In the monograph (pp. 618, 631, 634, and 637) we give differences in the male genitalia, stating that in *curriei* and *onondagensis* the stem of the harpago is slender, but stout in *quaylei*. It does so appear in the old slides of *quaylei*, one from Oakland, California, June 24, 1903 (I. McCracken), another from Tacoma, Washington, August, 1906 (Dyar & Caudell); but these have been strongly pressed. In a fresh preparation from Atherton, San Mateo County, California (L. McRoberts), which has not been pressed, the difference is not appreciable. The two pressed slides were prepared by Mr. H. S. Barber, while all the rest, except one *onondagensis*, which was prepared by Mr. O. A. Johannsen, were made by the junior author. The supposed specific character of *quaylei* is therefore due to the method of preparation.

There is some variation in the comb-scales of the larva, which might mislead the inexperienced. The free margin of the scale is drawn out into a series of teeth, those at the tip longest. Usually there are a number of subequal teeth at the tip; however, sometimes there is a distinctly longer one in the middle, but without structural difference. In the type that we define as having a "differentiated median tooth," the tip of the scale is drawn out to a long spine, while on each side there is a marginal row of cilia. In all the larvæ of *curriei* we have examined, rows of minute spicules are present on the skin. They vary considerably in abundance and can only be detected under high magnification.

Aedes curriei thus constitutes but a single species ranging over most of the United States. The other names cited are based upon illusory differences and will become synonyms. The stronghold of the species is in the western plains and the desert country of Utah, Nevada, and eastern California; but it penetrates to all the coasts, having been taken on the coast of New England and on the Gulf of Mexico. It has been taken near Chicago, and is probably scattered through open country here and there, finding a local abundance in favorably situated tidal pools. It does not occur in forested country, which

explains its rareness in the East. Salt marsh pools, it may be noted, are not forested and hence the occasional occurrence of the species on the Atlantic seaboard. The species has as many generations in the year as the conditions warrant, although probably only part of the eggs hatch at each successive wetting. Dyar demonstrated this in Nevada, where he obtained as many as three sets of larvæ from one deposition of eggs.

In regard to the European *dorsalis*, since there is but one species in America, there is probably but one in Europe, and *dorsalis* and *curriei* may properly be compared. As regards coloration, no differences appear. Unfortunately, we do not know the larva of *dorsalis*¹. The male genitalia are very similar to those of *curriei*; but we have only a single mount of *dorsalis*. In that, the two spines of the basal lobe of the side-piece seem more approximate than in *curriei*. We do not detect any other difference; but on account of the paucity of our information about *dorsalis*, we must leave the question of the exact relation existing between the American and European forms for the present undecided.

A NEW ORTALID FROM THE PHILIPPINES

(*Diptera, Ortalidæ*)

BY FREDERICK KNAB

The following new species was reared in the course of investigations by the Philippine Bureau of Agriculture and transmitted by the Entomologist, Mr. D. B. Mackie, to the Bureau of Entomology in Washington for determination. It is described herewith, so that the name may become available.

Plagiostenoptera hendeli, new species

Female.—Frons dull piceous black, deeply impressed at sides

¹F. W. Edwards (Bull. Ent. Res., vii, 217, 1917) mentions the larva of *dorsalis* thus: "Antennæ conspicuously pale at the base; about 24 scales in the comb of the eighth segment; scales pointed * * * and heavily fringed (of the even type); teeth of pecten with two or three serrations near the base, of which the apical one is considerably the largest; gills scarcely half as long as the anal segment, bluntly pointed." Unfortunately, the head hairs are not mentioned.